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EXAMINER
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GEBRESILASSIE, KIBROM K

ART UNIT	PAPER NUMBER
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2128

NOTIFICATION DATE	DELIVERY MODE
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04/04/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 09/996,745	<b>Applicant(s)</b> LICHTENBERG ET AL.	
	<b>Examiner</b> KIBROM K. GEBRESILASSIE	<b>Art Unit</b> 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-39, 44 and 45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-39, and 44-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This communication is responsive to amended application filed on 01/08/2008.
2. Claims 1-3, 5-39, and 44-45 are presented for examination.
  - a. Claims 4, and 40-43 are canceled.

### *Response to Arguments*

3. Applicants are thanked for arguments/remarks.
4. Applicant's arguments relating to drawing objection are not persuasive. As indicated in previous office action, the drawings are prior art. For example, applicant's specification states:

BDDs has a well known graphical representation. Figure 5 is an example of this representation. The figure is a BDD over two variables  $X_0$  and  $X_1$ . The chosen ordering  $\preceq$  of the variables is  $X_0 \preceq X_1$  and the BDD represents the formula:

$$X_0 \rightarrow ((X_1 \rightarrow 0, 1), 1) = (\neg X_0) \vee (\neg X_1).$$

5. The objection/rejection of claim 4, and 40-43 are withdrawn in view of cancellation of claims.
6. Applicant's arguments/amendments relating to 112, first and second, rejections are persuasive and the rejection is withdrawn except claim 45. Note new 112, first paragraph and second paragraph, rejections for claim 45.
  - b. As per claim 45, applicants indicated:

With regard to the recitation "at least one of the alternatives of the current component is compatible with the other selected alternatives respectively for the other chosen components and is compatible with at least one of the alternatives in each of yet-to-be-chosen components" as recited in claim 45, Applicants respectfully submit that this means that once an alternative for a component is selected, this alternative for this component is guaranteed to be compatible with the other *already selected* alternatives of the components, and is also guaranteed to be compatible with at least one the alternatives in *each of yet-to-be-chosen components*. For

Does this mean the solution is always true (i.e. compatible)? Further, the component is "yet-to-be-chosen", and then how is it possible the component "yet-to-be-chosen" guaranteed to be compatible with the other already selected components? Is there any mechanism to force the "yet-to-be-chosen" to be compatible with the component already selected? Further, it could also raise a question whether there is a missing step that somehow forces the "yet-to-be-chosen" component to be compatible with any other selected alternative component.

7. Applicant's argument relating to 101 rejection is not persuasive.

c. For example, claim 1 recites:

iteratively configuring the product by repeatedly:

choosing a current component,

selecting one of alternatives for the current component,

checking the DAG whether the selected alternative is compatible with other selected alternatives of other chosen components, thereby the product being configured using all of the selected alternatives for all of the components.

Examiner questioned whether the recited limitation produces a useful, tangible and concrete result because the result could be "non-compatible" as well. As recited, the "DAG" is only checking whether the selected alternative is compatible with other selected components. It is unclear what will be the outcome when the selected alternative is "non-compatible". It seems there is uncertain result when the selected alternative is "non-compatible". Overall, there

is unrepeatable result unless the "compatible" is always true. As result, there is no real world result i.e. no tangible result. The claimed invention is not specific and substantial and therefore it fails to satisfy the utility requirement of 101 i.e. usefulness. Therefore, the claims as a whole are drawn to an abstract idea and do not provide for a practical application, as evidenced by lack of physical transformation or a useful, tangible, and concrete result.

Further, applicants argued:

Here, claims 1-39 are directed to at least one practical application within the technological arts, i.e., configuring a product to produces a useful, concrete and tangible result, i.e., "the product being configured using all of the selected alternatives for all of the components" as recited in claim 1.

However, applicant's specification (page 17) states:

"Specifying relevant aspects of the product as the *product model*. The product model describes components, attributes for these components, as well as alternatives for each component and values for each attribute. Furthermore the product model comprises a group of rules relating to compatibilities between components and attributes."

"The product model is encoded as a virtual table. The virtual table is a directed acyclic graph that represents all consistent configurations. This concrete directed acyclic graph is a Boolean Decision Diagram (BDD)"

In light of the specification, the "product" is not restricted to any field of application, and therefore the claims are directed to all possible applications of the math recited in the claims.

MPEP states:

Accordingly, one may not patent every "substantial practical application" of an idea, law of nature or natural phenomena because such a patent would "in practical effect be a patent on the [idea, law of nature or natural phenomena] itself." *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).

If there is sufficient reason to question whether a claim recited a patent eligible subject matter, it is reasonable to reject the claim under 35 USC 101.

8. Applicants argument relating to art rejection is not persuasive.

d. Applicants argued:

It is a key feature of the present invention that the DAG is used for checking for compatibilities (as explained, e.g., in the specification page 41, lines 20-24) and not the individual rules (as prescribed by Lynch). *The Examiner on page 15, line 1 of the outstanding Office Action has left out this important aspect of the invention when alleging Lynch discloses this claimed feature.* In fact, Lynch nowhere discloses using the tree structure in FIG. 2 to check the compatibilities when configuring a product. FIG. 2 of Lynch simply is a functional hierarchy which only defines the function that a component performs and cannot provide the ability to daisy chain components (see also col. 4, lines 9-51). Lynch nowhere discloses that the compatibility rules are represented by the functional hierarchy shown in FIG. 2 of Lynch.

In response, examiner respectfully disagrees.

First, as applicants admitted, DAG is well known in the art. It would have been obvious to one ordinary skill in the art at the time of the invention to modify configuration system of Lynch et al to include DAG to identify logical datatype and physical interconnections between elements and establish connections between elements.

Second, configuration system by definition is to check the compatibility of a product. For example, the prior art discloses *configuring a desktop computer system requires that selected component is compatible with other components in the configured system, for example, a power supply must be sufficient to supply*

*power to all of the components of the system, in addition, the monitor must be compatible with the video controller (e.g., resolution), and the storage device must be compatible with its controller (e.g., SCSI interface), a motherboard must have enough slots to handle all of the boards installed in the system (See: Col. 1 lines 40-65). Further, the prior art discloses early computer-based configuration systems employed approach referred to as the rule-based approach, rule-based configuration systems define rules (i.e. "if A, then B") to validate a selection of configuration alternative (See: Col. 2 lines 40-43).*

### **Drawings**

9. Figures 4-10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicants specification recites as follows:

BDDs has a well known graphical representation. Figure 5 is an example of this representation. The figure is a BDD over two variables  $X_0$  and  $X_1$ . The chosen ordering  $\preceq$  of the variables is  $X_0 \preceq X_1$  and the BDD represents the formula:

$$X_0 \rightarrow ((X_1 \rightarrow 0, 1), 1) = (\neg X_0) \vee (\neg X_1).$$

The BDD graphic representations are well known and are **PRIOR ART**.

10. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **speech synthesizer and/or speech recognizer** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

11. Claim 1 is objected to because of the following informalities: For example, claim 1 lines 7, “lease” is misspelled. Appropriate correction is required.



***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claim 45 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

- a. As per claim 45, applicants indicated:

With regard to the recitation "at least one of the alternatives of the current component is compatible with the other selected alternatives respectively for the other chosen components and is compatible with at least one of the alternatives in each of yet-to-be-chosen components" as recited in claim 45, Applicants respectfully submit that this means that once an alternative for a component is selected, this alternative for this component is guaranteed to be compatible with the other already selected alternatives of the components, and is also guaranteed to be compatible with at least one the alternatives in each of yet-to-be-chosen components. For

Does this mean the solution is always true (i.e. compatible)? Further, the component is "yet-to-be-chosen", and then how is it possible the component "yet-to-be-chosen" guaranteed to be compatible with the other already selected components? Is there any mechanism to force the "yet-to-be-chosen" to be compatible with the component already selected?

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 45 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

e. It is unclear how "yet-to-be-chosen" to be compatible with already selected component? Isn't it also being "incompatible"? Is it always true to have only "compatible" solution?

f. Further, it could also raise a question whether there is a missing step that somehow forces the "yet-to-be-chosen" component to be compatible with any other selected alternative component.

***Claim Rejections - 35 USC § 101***

16. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

17. Claims 1-3, 5-39, and 44-45 are rejected under 35 U.S.C. 101 as being directed to nonstatutory subject matter since the claims as a whole are drawn to **an abstract idea** and do not provide for a practical application, as evidenced by lack of physical transformation or a useful, tangible, and concrete result.

g. For example, claim 1 recites:

iteratively configuring the product by repeatedly:

choosing a current component,

selecting one of alternatives for the current component,

checking the DAG ~~whether~~ the selected alternative is compatible with other

selected alternatives of other chosen components, thereby the product being configured using all

of the selected alternatives for all of the components.

Examiner questioned whether the recited limitation produces a useful, tangible and concrete result because the result could be "non-compatible" as well. As recited, the "DAG" is only checking whether the selected alternative is compatible with other selected components. It is unclear what will be the outcome when the selected alternative is "non-compatible". It seems there is uncertain result when the selected alternative is "non-compatible". Overall, there is unrepeatable result unless the "compatible" is always true. As result, there is no real world result i.e. no tangible result. The claimed invention is not specific and substantial and therefore it fails to satisfy the utility requirement of 101 i.e. usefulness. Therefore, the claims as a whole are drawn to **an abstract idea** and do not provide for a practical application, as evidenced by lack of physical transformation or a useful, tangible, and concrete result.

Further, applicants argued:

Here, claims 1-39 are directed to at least one practical application within the technological arts, i.e., configuring a product to produces a useful, concrete and tangible result, i.e., "the product being configured using all of the selected alternatives for all of the components" as recited in claim 1.

However, applicant's specification (page 17) states:

"Specifying relevant aspects of the product as the *product model*. The product model describes components, attributes for these components, as well as alternatives for each component and values for each attribute. Furthermore the product model comprises a group of rules relating to compatibilities between components and attributes."

"The product model is encoded as a virtual table. The virtual table is a directed acyclic graph that represents all consistent configurations. This concrete directed acyclic graph is a Boolean Decision Diagram (BDD)"

In light of the specification, the “product” is not restricted to any field of application, and therefore the claims are directed to all possible applications of the math recited in the claims.

MPEP states:

Accordingly, one may not patent every “substantial practical application” of an idea, law of nature or natural phenomena because such a patent would “in practical effect be a patent on the [idea, law of nature or natural phenomena] itself.” *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).

If there is sufficient reason to question whether a claims recited a patent eligible subject matter, it is reasonable to reject the claim under 35 USC 101. At least for this reason, the claimed subject matter is non-statutory.

### ***Applicants Own Admission***

18. The following is noted from the specification:

Page 7, lines 30-33:

- so This method is rather simple in that the constructing of a partial DAG from a rule is normally a simple task - and the combination of DAGs is a well-known technique, which is, actually, facilitated if the above ordering of the expressions is used.

Page 17, lines 30-34:

- The product model is encoded as a virtual table. The virtual table is a directed acyclic graph that represents all consistent configurations. This concrete directed acyclic graph is a Boolean Decision Diagram (BDD) (known to the man skilled in the field of *symbolic model checking*) with two variables external (representing that the selected gear is external) and carbon (representing that the carbon

Page 25, lines 3-5:

A Boolean Decision Diagram (BDD) is a DAG comprising nodes each containing a single Boolean variable. It is well known from the area of formal verification of hardware circuits that BDDs can be used to encode arbitrary Boolean functions of type  $\mathbb{B}^n$  (where  $n$  is the number of Boolean variables):

Page 25, lines 16-19:

For example, Difference Decision Diagrams (See Möller et al: *Difference Decision Diagrams*. In proceedings Annual Conference of the European Association for Computer Science Logic (CSL), September 20-25 1999, Madrid, Spain.) can be used to express (a sub-set of) functions of type  $\mathbb{R} \rightarrow \mathbb{B}$ , and at the same time provides the needed algorithms. The immediate advantage is that we thereby have a method of encoding product models where the rules comprise (a restricted subset) of quantified expression over variables with

Page 25, lines 23-29 and page 26 lines 1-4:

Another approach, relevant when the rules of the product model comprises more general arithmetic operations is the use of BDDs over *interpreted Boolean variables* (see W. Chan, R. J. Anderson, P. Beame, and D. Notkin: *Combining constraint solving and symbolic model checking for a class of systems with non-linear constraints*. In O. Grumberg, editor, Computer Aided Verification, 9th International Conference, CAV'97 Proceedings, volume 1254 of Lecture Notes in Computer Science, pages 316-327, Haifa, Israel, June 1997. Springer-Verlag.). Each Boolean variable represents a formula, a path in the DAG represents a conjunction of such formulas and satisfiability of such path a path can be determined using for example linear programming.

The encoding the product model as a virtual table will in the following be described in its preferred embodiment (using BDDs). However, the person skilled in the art can tweak the algorithms to use a different underlying data structured, for example one of the two data structures mentioned above.

Page 30, lines 1-15:

The use of Boolean Decision Diagrams for the representation of Boolean formulas is well known. For an introduction to Boolean Decision Diagrams see [Cristoph Meinel & Thorsten Theobald: *Algorithms and Data Structures in VLSI Design*, Springer 1998]. We will use the following (well known) textual representation of BDDs:

- 0 represents the terminal BDD 0 (true),
- 1 represents the terminal BDD 1 (false),
- $(a \otimes b)$  represents the BDD obtained by applying  $a$  and  $b$  with the any binary Boolean operator denoted by  $\otimes$  operator.
- $\exists x. a$  represents the BDD obtained by existentially quantifying out the variable  $x$  from the BDD  $a$ .
- $(x \rightarrow a, b)$  is the BDD representing the formula if  $x$  then  $a$  else  $b$ , which can be expressed in terms of simpler operators as  $(x \wedge a) \vee (\neg x \wedge b)$ .

BDDs has a well known graphical representation. Figure 5 is an example of this representation. The figure is a BDD over two variables  $X_0$  and  $X_1$ . The chosen ordering  $\prec$  of the variables is  $X_0 \prec X_1$  and the BDD represents the formula:

$$X_0 \rightarrow ((X_1 \rightarrow 0, 1), 1) = (\neg X_0) \vee (\neg X_1).$$

### **Claim Rejections - 35 USC § 102**

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

20. Claims 35 is rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6, 430, 531 B1 issued to Polish et al.

As per claim 35.

Polish discloses a method of configuring a product according to claim 1, wherein the method further comprises providing a system with a speech recognizer, and wherein the step of iteratively configuring the product further comprises choosing a component from a text recognized by the speech recognizer; and selecting an alternative from this component's group of alternatives from a text recognized by the speech recognizer  
**(See: Fig. 7 and corresponding texts).**

***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 1-3, 5-34, 36-39, and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5, 515, 524 issued to Lynch et al. in view of Applicants Own Admission (herein referred as AOA).

As per claim 1:

Lynch discloses a method of configuring a product comprising a number of components **(Title)**, the method comprising:

providing, for each component, information relating to a group of alternatives for the component **(See: Abstract lines 1-6; Fig. 2)**,

defining rules relating to compatibilities between alternatives from different components (such as **constraints...**; **See: abstract lines 1-6)**,

iteratively configuring the product by repeatedly:

choosing a current component **(See: Col. 5 lines 53-62)**,

selecting one of alternatives for the current component **(See: Col. 5 lines 53-62)**,

checking whether the selected alternative compatible with other selected

alternatives of other chosen components **(See: col. 5 lines 64-67 and Col. 6 lines 1-27)**.

Lynch discloses a constraint based configuration system using a structural model hierarchy. However, Lynch fails to disclose representing the rules in a Directed Acyclic Graph (DAG).

AOA discloses representing the rules in a Directed Acyclic Graph (DAG) **(See: Page 25, lines 23-29)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Lynch et al with applicant Own Admission to provide the ability to specify the connection or relationship between components of a configured system.

As per claim 2



Lynch discloses a method of configuring a product according to claim 1 in which the iterative configuring is ended when an alternative is chosen for each component and when the chosen alternatives of the components are compatible (**See: Col. 12 lines 55-63; Fig. 7(1) and Fig. 7(2)**).

As per claim 3

Lynch discloses a method of configuring a product according to claim 1, wherein the step of selecting the alternative, and before the selection of the alternative, comprises: using the DAG to determine, for at least one of the components, a subset of alternatives for the component, so that each of the alternatives in the subset is compatible with the chosen alternatives from the other components (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**), and providing this information to a user (**See: Col. 30 lines 33-46**).

As per claim 4:

Cancelled.

As per claim 5

Lynch discloses a method of configuring a product according to claim 1, wherein the steps of choosing a component and the alternative further comprise, for each of the components: using the DAG to check which of the alternatives of the component that are compatible with at least one of the chosen alternatives of each of the other components (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**), providing a user with this information (**See: Col. 30 lines 33-46**), allowing the user to select one of the alternatives that were compatible with at least one of each of the other' component's

chosen alternatives (**See: Col. 13 lines 11-14**).

As per claim 6

Lynch discloses a method according to claim 1, wherein the steps of selecting the alternative and checking the DAG further comprise the steps of: selecting or defining a subgroup of alternatives to the chosen component, checking the DAG for which of the alternatives in the subgroup that are compatible with chosen alternatives from other components, and providing information relating to which of the alternatives in the subgroup are compatible with chosen alternatives of other components (**See: col. 5 lines 49-67 and Col. 6 lines 1-27**).

As per claim 7

Lynch discloses a method of configuring a product according to claim 1, wherein the iterative configuration further comprises: at least once, defining information relating to limiting the alternatives of at least one of the components, and checking the DAG for which of the alternatives of the components is compatible with the limiting information (**See: Col. 29 lines 42-61**).

As per claim 8

Lynch discloses a method of configuring a product according to claim 1 in which the iterative configuring is ended upon request from a user, and information is provided relating to all possible compatible products comprising at least one chosen alternative for each of the products for which an alternative is chosen (**See: Col. 5 lines 59-62**), and this information is provided to the user (**See: Col. 30 lines 33-46**).

As per claim 9

Lynch discloses a method of configuring a product according to claim 1 in which the iterative configuring comprises the steps of obtaining a number of all possible compatible products comprising at least one chosen alternative for each of the products for which an alternative is chosen (**See: Col. 5 lines 59-62**), and providing this information to the user (**See: Col. 30 lines 33-46**).

As per claims 10-31:

Claims 10-31 recite the structure and feature of DAG, which is merely using the existing features of the prior art (**See: Applicants Admission**). Applicants do not disclose inventing a DAG system. Therefore, any claims directed to the structure and feature of DAG method must be regarded as being a prior art. All the features and limitation recited in claim 10-30 are prior art and disclosed in Applicants Admission shown above.

As per claim 32

Lynch discloses a method of configuring a product according to claim 1, the method further comprising: identifying a user, performing the step of selecting an alternative of a component by the user through communication between a device controlled by the user and another device where the iterative configuration is performed, transmitting information relating to the checking of the DAG to the user (**See: col. 30 lines 40-45**).

As per claim 33

Lynch discloses a method of configuring a product according to claim 1, wherein the method further comprises: identifying a user, prior to the iterative configuring:

transmitting the DAG to a device controlled by the user (**See: Col. 30 lines 33-46**),  
performing the iterative configuring on the user's device (**See: Col. 30 lines 46-52**).

As per claim 34

Lynch discloses a method of configuring a product according to claim 1, further comprising the steps of, during the iterative configuration: obtaining information relating to one or more alternatives for components for which no alternatives have been chosen, each of the one or more alternatives being compatible with the chosen alternatives (**See: Col. 30 lines 35-39**), and providing the user' with this information (**See: Col. 30 lines 33-46**).

As per claim 36

Lynch discloses a method of configuring a product according to claim 1, wherein the method further comprises identifying a configurable device and an interface device, and storing the DAG representing the rules on the configurable device, uploading the DAG from the configurable device to the interface device, and in the step of iteratively configuring the product, performing the checking of the DAG whether the alternative selected is compatible with other chosen alternatives from other components on the interface device (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**).

As per claim 37

Lynch discloses a method of configuring a product according to claim 36 wherein the method further' comprises identifying a list of predetermined components in the configurable device and identifying a list of predetermined alternatives for these components in the configurable device, and wherein the step of iteratively configuring

the product further comprises performing the checking of the DAG whether the alternative selected is compatible with other chosen alternatives from other components and compatible with the predetermined alternatives on the interface device (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**).

As per claim 38

Lynch discloses a method of configuring a product according to claim 1, wherein the method further comprises identifying a list of observer components and a list of non-observer components, and

representing the rules for the non-observer components in a DAG, determining, for each observer component, a subset of the rules, such that from these rules it is possible to determine the alternatives for the observer component that are compatible with alternatives for the non-observer components (**See: Abstract**),

representing for each observer component the subset of rules as an observer DAG, and in the step of iteratively configuring the product (**See: Abstract**),

checking the DAG whether the alternative selected is compatible with other chosen alternatives from other components (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**),

determining a set of system determined alternatives by determining for each component whether there is only a single alternative compatible with all the chosen alternatives (**See: Col. 5 lines 59-62**),

for at least one of the observer components, checking the observer DAG for the observer component to determine whether there is only a single alternative compatible

with other chosen alternatives and the set of system determined alternatives (**See: col. 5 lines 64-67 and Col. 6 lines 1-27**), and

providing this information to a user (**See: Col. 30 lines 33-46**).

As per claim 39

Lynch discloses a method of configuring a product according to claim 1 wherein the step of iteratively configuring the product further comprises for each pair of component and alternative providing a classification of the state of the pair, adopting the classification to one of a list of outcomes comprising blocked, selectable, user selected, system selected, or forceable, providing a classification of blocked when the alternative cannot be chosen for the component even without considering choices of alternatives for other components , providing a classification of selectable when the alternative for the component is compatible with the chosen alternatives from the other components, providing a classification of user selected when the alternative has already been chosen for the component, providing a classification of system selected when the alternative is the only choice for the component that is compatible with the chosen alternatives from the other components and the alternative has not been chosen by the user, providing a classification of forceable when the alternative can be chosen for the component but is incompatible with some of the other choices of alternatives of the other components (**See: Col. 12 lines 3-10, Col. 28 lines 10-21, lines 37-39, lines 47-67**), and providing information on the classification to a user (**See: Col. 30 lines 33-46**).

As per claim 40-43:

Canceled.

As per claim 44

AOA discloses a method of configuring a product according to claim 1, wherein the DAG has at least one path from a topmost node to a bottom most node satisfying all of the rules in the DAG, each of the components having one alternative in the at least one path such that the alternative of each of the components in the at least one path is compatible with each other (See: **Applicants Admission, for example Fig. 5**).

As per claim 45

Lynch discloses a method of configuring a product according to claim 1, wherein at least one of the alternatives of the current component is compatible with the other selected alternatives respectively for the other chosen components and is compatible with at least one of the alternatives in each of yet-to-be-chosen components (**See: Abstract**).

### **Conclusion**

23. Claims 1-3, 5-39, and 44-45 are rejected.

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

25. Examiner's Note: **Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.**

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. **It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.**

26. **In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on** for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

b. *US Patent No. 6,522,331 B1 issued to Danks et al.*

### ***Communications***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is



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571-272-8571. The examiner can normally be reached on 8:00 am - 4:30 pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini S. Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. K. G./

Examiner, Art Unit 2128

/Hugh Jones/

Primary Examiner, Art Unit 2128